

Claims

1. Assay for testing a sample for the presence or absence of inhibition of the enzymatic conversion of 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate into isopentenyl diphosphate and/or dimethylallyl diphosphate by the following steps:
 - (a) reacting an aqueous mixture containing 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate, a 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate reductase, and a reducing agent under predetermined reaction conditions for a predetermined period of time;
 - (b) analyzing the reaction mixture obtained in step (a) for the consumed amount of 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate and/or said reducing agent and/or for the produced amount of isopentenyl diphosphate, and/or dimethylallyl diphosphate and/or an oxidation product of said reducing agent;
 - (c) repeating step (a) in the presence of the sample to be tested;
 - (d) repeating step (b) with the reaction mixture defined in step (c);
 - (e) comparing the results of steps (b) and (d).
2. Assay for testing a sample for the presence or absence of inhibition of the enzymatic conversion of 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate into isopentenyl diphosphate and/or dimethylallyl diphosphate by the following steps:
 - (a) reacting an aqueous mixture containing 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate, a 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate reductase, NAD(P)H, flavodoxin, and a flavodoxin reductase predetermined reaction conditions for a predetermined period of time;
 - (b) analyzing the reaction mixture obtained in step (a) for the consumed amount of 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate and/or NAD(P)H and/or for the produced amount of isopentenyl diphosphate, and/or dimethylallyl diphosphate and/or NAD(P)⁺;
 - (c) repeating step (a) in the presence of the sample to be tested;
 - (d) repeating step (b) with the reaction mixture defined in step (c);
 - (e) comparing the results of steps (b) and (d).

3. Assay according to claim 2, wherein the consumed amount of NAD(P)H is measured photometrically.
4. Assay according to claim 2 or 3, whereby in steps (b) or (d) the produced amount of NAD(P)⁺ or isopentenyl diphosphate and/or dimethylallyl diphosphate is tested.
5. Assay according to claim 4, wherein the produced amount of NAD(P)⁺ is measured photometrically.
6. Assay according to one of claims 2 to 6, wherein NADPH is used as said NAD(P)H.
7. Assay according to one of claims 1 to 6, wherein after the predetermined period of time the reaction is stopped by addition of trichloroacetic acid.
8. Assay according to one of claims 1 to 7, wherein steps (a) and (c) are carried out at 37°C for 1 hour under aerobic conditions.
9. Assay according to one of claims 1 to 7, wherein steps (a) and (c) are carried out under anaerobic conditions.
10. The assay of one of claims 1 to 9, wherein said 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate reductase is IspH.
11. Sample capable of inhibiting the enzymatic conversion of 1-hydroxy-2-methyl-(E)-butenyl 4-diphosphate into isopentenyl diphosphate and/or dimethylallyl diphosphate identified according to one of claims 1 to 10.